

AMENDMENTS TO THE SPECIFICATION

Please replace Paragraph [0031] with the following paragraph rewritten in amendment format:

[0031] In another embodiment, the invention is directed to a method of synthesizing a heterologous polypeptide. The method comprises providing a transgenic host cell comprising a recombinant DNA transgene in which the cell transcribes the recombinant DNA transgene and thereby accumulates a recombinant RNA molecule, and stimulating or activating the synthesis of an RNA complementary to the recombinant RNA molecule. In this method, the recombinant DNA transgene can comprise a promoter operably linked, in 5'to 3' order, to a DNA sequence comprising a sequence complementary to the coding sequence for a heterologous polypeptide, a DNA sequence complementary to an IRES, and a DNA sequence corresponding to a 3'UTR of a positive strand single-stranded RNA virus. As shown in Figure 6, the DNA transgene includes a template strand reading from the 3' to the 5' direction of a DNA sequence comprising a promoter, a coding sequence for a heterologous polypeptide, a coding sequence to an IRES, and a DNA sequence corresponding to a complementary sequence to the coding sequence of a 3'UTR of a positive strand single-stranded RNA virus. The transgene can also include sequence complementary to one or more intervening sequences ("introns"), and, at the 3' end, a transcription terminator. A recombinant RNA transcribed from DNA of the transgenic host cell can comprise, in 5'to 3' order, an RNA sequence complementary to the coding sequence for a heterologous polypeptide, an RNA sequence complementary to an IRES, and a 3'UTR of a positive strand single-stranded RNA virus. Stimulating or activating synthesis of an RNA complementary to the recombinant RNA

can result in synthesis of an RNA sequence comprising the complement of a 3'UTR of a positive strand single-stranded RNA virus, an IRES, and coding sequence of a heterologous polypeptide, wherein the IRES and the coding sequence are operably linked. Host cell ribosomes are expected to bind to the RNA complementary to the recombinant RNA and translate the coding sequence, thereby forming the heterologous polypeptide. Stimulating the synthesis of the RNA complement of the recombinant RNA molecule can comprise infecting the host cell with a positive strand single-stranded RNA virus, transfecting the host cell with a cDNA of a positive strand single-stranded RNA virus or transfecting the host cell with RNA of a positive strand single-stranded RNA virus. The transfecting can be by any transfection method known in the art. It is believed that RNA of a positive strand single-stranded RNA virus, upon infection or transfection of the host cell, is translated by host cell ribosomes, thereby providing polypeptide components comprised by a replication complex, such as, for example, an RNA-dependent RNA polymerase. A replication complex is expected to bind to the 3'UTR of the recombinant RNA, and initiate synthesis of an RNA complementary to the recombinant RNA starting at the 3'UTR. Elongation synthesis of RNA complementary to the recombinant RNA is expected to follow initial binding of the replication complex to the 3'UTR. Translation of the coding sequence comprised by the RNA complementary to the recombinant RNA comprises ribosomes recognizing and binding the IRES, and initiating translation of the coding sequence operably linked to the IRES. Translation of the coding sequence yields the heterologous polypeptide.